

CLAIMS

[We claim:

1. A recombinant nucleic acid encoding a cell cycle protein comprising a nucleic acid that hybridizes under high stringency conditions to a sequence complementary to that set forth in Figure 21, 22, 23, 24, 25, 26, 27 or 28.
2. The recombinant nucleic acid of claim 1 wherein said protein binds to at least one of Traf2 and Nck.
3. The recombinant nucleic acid of claim 1 comprising a nucleic acid sequence as set forth in Figure 21, 22, 23, 24, 25, 26, 27 or 28.
4. A recombinant nucleic acid encoding a cell cycle protein comprising a nucleic acid having at least 90% sequence identity to a N-terminal kinase domain or C-terminal germinal center kinase homology region, and greater than 45% sequence identity to an intermediate region sequence as set forth in Figure 21, 22, 23, 24, 25, 26, 27 or 28.
5. A recombinant nucleic acid encoding an amino acid sequence as shown in Figure 1 for Tnik or Figure 29, 30, 31, 32, 33, 34 or 35.
6. An expression vector comprising the recombinant nucleic acid according to any one of claims 1, 2, 3, 4, or 5, operably linked to regulatory sequences recognized by a host cell transformed with the nucleic acid.
7. A host cell comprising the recombinant nucleic acid according to any one of claims 1, 2, 3, 4, or 5.
8. A host cell comprising the vector of claim 6.
9. A process for producing a cell cycle protein comprising culturing the host cell of claim 7 or 8 under conditions suitable for expression of a cell cycle protein.

10. A process according to claim 9 further comprising recovering said cell cycle protein.

11. A recombinant cell cycle protein encoded by the nucleic acid of any of claims 1, 2, 3, 4, or 5.

5 12. A recombinant polypeptide comprising an amino acid sequence having at least 90% sequence identity to a N-terminal kinase domain or C-terminal germinal center kinase homology region, and greater than 45% sequence identity to an intermediate region sequence as set forth in Figure 21, 22, 23, 24, 25, 26, 27 or 28.

13. The recombinant polypeptide of claim 12 wherein said polypeptide binds to at least one of Traf2 and Nck.

10 14. The recombinant polypeptide of claim 12 wherein said sequence is set forth in Figure 1 for Tnk1 or Figure 29, 30, 31, 32, 33, 34 or 35.

15. An isolated polypeptide which specifically binds to a cell cycle protein according to claim 13.

16. A polypeptide according to claim 15 that is an antibody.

17. A polypeptide according to claim 16 wherein said antibody is a monoclonal antibody.

15 18. The monoclonal antibody of claim 17 wherein said antibody reduces or eliminates the biological function of said cell cycle protein.

19. A method for screening for a bioactive agent capable of binding to a cell cycle protein, said method comprising:

- a) combining a cell cycle protein and a candidate bioactive agent; and
- b) determining the binding of said candidate bioactive agent to said cell cycle protein.

20 20. A method for screening for a bioactive agent capable of interfering with the binding of a cell cycle protein and a Traf2 or Nck protein, said method comprising:

Sub
C2

- a) combining a cell cycle protein, a candidate bioactive agent and a Traf2 or Nck protein;
and
b) determining the binding of said cell cycle protein and said Traf2 or Nck protein.

21. A method according to Claim 20, wherein said cell cycle protein and said Traf2 or Nck protein are combined first.

22. A method for screening for a bioactive agent capable of modulating the activity of cell cycle protein, said method comprising:

- a) adding a candidate bioactive agent to a cell comprising a recombinant nucleic acid encoding a cell cycle protein; and
b) determining the effect of said candidate bioactive agent on said cell.

23. A method according to Claim 22, wherein a library of candidate bioactive agents is added to a plurality of cells comprising a recombinant nucleic acid encoding a cell cycle protein.